

REMARKS

By the above actions, claim 1 has been canceled, claims 3-6 have been further amended, and new claim 7 has been added. In view of the actions taken and the following remarks, further consideration of this application is now requested. Claim 7 includes the features of canceled claim 1, which are now presented in a different order in order to clarify the unique combination of recited elements.

Claim 3 was rejected under 35 U.S.C. § 112 as being indefinite due to recitation of “a pressure holding valve.” Claim 3 has been amended to correct this antecedent error as the pressure holding valve has been recited in the independent claim (now claim 7).

Claims 1 and 3-6 were rejected under 35 U.S.C. § 103 as being obvious over the combined teachings of the International application of Köhne (WO 00/06948) in view of U.S. Patent 5,425,342 to Ariga et al. (Ariga). As claim 1 is canceled in favor of claim 7, the rejection will be addressed with respect to the features of claim 7.

As recognized in the Office Action, Köhne’s device does not disclose a fuel feed means comprising a pressure impulse injection means that comprises a fuel pump and a changeover valve, as originally recited in claim 1. Ariga is cited as teaching a fuel feed means wherein fuel is supplied, according to the Examiner, by using a pressure impulse injection means including a fuel pump 14 and a changeover valve 16 having an input side connected to the fuel pump 14 and an output side selectively connectable with the fuel source 12 via a fuel return line 22 and a fuel supply line 19 for directing fuel from the pump 14 to either the fuel supply line 19 or the fuel source 12. A pressure holding valve is identified as control valve 24 in fuel return line 22 to maintain the pressure differential across the fuel injectors. In the Office Action it is stated that it would have been obvious to include the pressure impulse injection means of Ariga in Köhne’s device to maintain a pressure differential across the fuel injectors at a first predetermined level and perform pressure regulation. It is requested that this rejection be withdrawn as the combination of elements recited in claim 7 are not present in the devices of Ariga or Köhne nor are they suggested by a combination thereof.

Claim 7 recites, *inter alia*, a fuel feed means connected to a fuel source for feeding fuel between the fuel source and the fuel line. The fuel feed means includes a supply line, a return

line, and a pressure impulse injection means for selectively supplying fuel from the supply line to **either** the fuel line or the return line, i.e., either of the fuel line and the return line can be selected. The supply line includes a fuel pump having a pumping pressure, and the return line includes a pressure holding valve having a holding pressure, wherein the pumping pressure is matched to the holding pressure. The pressure impulse injection means includes a changeover valve having an input side connected to the fuel pump and an output side that is selectively connectable with the fuel source via the return line and the mixture formation area via the fuel line **such that the changeover valve directs fuel from the fuel pump to either the fuel line or the fuel source.** As explained below, none of the applied prior art discloses a pressure impulse injection means as claimed, and particularly does not disclose a changeover valve or pressure holding valve as claimed.

In distinction, Ariga, which is relied upon as teaching of these features, discloses a system in which a control valve 24, operated by a digital computer based on time and temperature determinations, switches between two separate pressure regulators 16 and 20. (See col. 4, line 52 through col. 5, line 22, of Ariga that details the determinations of the control program for control valve 24.) Ariga's system has two modes as explained in col. 3, lines 51-60. In the first mode, the first pressure regulator 16 is rendered operable to effect pressure regulation, the second pressure regulator 20 is inoperable, and fuel returns to the fuel tank 12 through the first return passage 22. In the second mode, the first pressure regulator 16 is rendered inoperable, the second pressure regulator 20 performs pressure regulation, and fuel returns to the tank 12 through the second return passage 26. When the first pressure regulator 16 is operable to maintain pressure regulation, a portion of the fuel is returned to the fuel tank 12 through the first return passage 22.

Ariga's first pressure regulator 16 is not a pressure impulse injection means as recited in claim 7 as it does not include a changeover valve having an input side connected to the fuel pump and an output side that is selectively connectable with the fuel source via the return line and the mixture formation area via the fuel line such that the changeover valve directs fuel from the fuel pump to one or the other of the fuel line and the fuel source. Ariga's valve 16 is either inoperable or is connected to both the fuel gallery 19 and the first return passage 22 for pressure regulation. Further, Ariga's control valve 24 is not a pressure holding valve as recited in claim 7

as it does not have a holding pressure, wherein the pumping pressure is matched to the holding pressure. Ariga's control valve 24 is controlled by a digital computer based on time and temperature determinations. Moreover, there are no components in Ariga that direct fuel from the fuel pump to either the fuel line or the fuel source. As such Ariga does not remedy the deficiencies of Köhne identified in the Office Action.

Regardless of whether it would have been obvious or not to modify the Köhne device in view of the teachings of Ariga, the proposed combination lacks all of the features of new claim 7. Thus, claim 7 is allowable over this combination of references along with dependent claims 3-6. In view of the foregoing, reconsideration and withdrawal of the outstanding rejection under § 103 is hereby requested.

While this application should now be in condition for allowance, in the event that any issues should remain after consideration of this response which could be addressed through discussions with the undersigned, then the Examiner is requested to contact the undersigned by telephone for that purpose.

Respectfully submitted,



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